INTERNATIONAL TSUNAMI INFORMATION CENTER
NEWSLETTER
ITIC • P.O. BOX 3887 • HONOLULU, HAWAII 96812 • USA

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SECOND MEETING OF THE INTERNATIONAL COORDINATION GROUP FOR THE TSUNAMI WARNING SYSTEM IN THE PACIFIC - Vancouver, British Columbia, Canada, May 12-14, 1970

Background: This Group was officially established in 1966 by the Intergovernmental Oceanographic Commission's Resolution (IOC/IV-Res 1) adopted at the IOC Paris meetings of November 3-12, 1965. The first meeting of the Group was held in Honolulu, Hawaii on March 25-28, 1968. That meeting was reported in ITIC NEWSLETTER, Vol. 1, No. 1 dated June 5, 1968.

Purpose: The purpose of this second meeting was to review the operation of the Tsunami Warning System, to accept National Reports on the developments since the first meeting and to discuss any recommendations for improvements to the system which may be recommended by the participating nations.

Participants:

National Coordinators

Canada	Dr. G. L. Pickard (Vice-Chairman) Mr. G. C. Dohler
France	Dr. M. Corbel
Japan	Dr. Akira Suwa
Philippines	Mr. E. A. Damian
U.S.A.	Mr. L. M. Murphy (Head of U.S. Delegation and representing the National Coordinator, J. M. Klaasse) Mr. B. D. Zetler Mr. R. A. Eppley
USSR	Dr. U. V. Tarbeev

I.O.C. Representative

IOC/UNESCO	Dr. G. Giermann

International Organizations

WMO	Mr. L. M. Murphy
IUGG	Mr. B. D. Zetler

Observers

ITIC	Captain R. C. Munson
CBRESIS	Ing. A. Giesecke
Canada	Mr. S. O. Wigen - Can. Hydro. Serv. Mr. J. H. Erb - Prov. Civil Defence Mr. W. W. Mathers - Prov. Civil Defence Dr. T. S. Murty - Dept. Energy, Mines & Res. Dr. T. Watanabe - U. of B.C.
USA	Mr. R. F. Gordon - Am. Nat'l Red Cross Mr. W. J. Phillips - Am. Nat'l Red Cross

Adopted Agenda:

1. Opening of the Meeting.
2. Adoption of the Agenda.
3. Report on Recommendations and Resolutions from March 1968 Meeting.
4. ITIC Developments.
5. Summary report on IUGG Symposium.
6. a. Tsunami data reporting.
   b. Improvement of the System of international exchange of urgent information on tsunami.
7. Status reports on current tsunami research and instrumental developments.
8. National dissemination programmes.
9. Tsunami forecasting.
10. Date and place of next meeting and arrangements for coordination of ICG activities during the interim period.

11. Other business.

12. Adoption of report of meeting.

13. Closure of meeting.

Recommendations adopted by ICG/TWG for submission to IOC:

1. It is recommended that, through IOC, countries bordering the Pacific Ocean be approached to install for the benefit of the Tsunami Warning System, equipment to transmit sea level and seismic data on a real-time basis. It is further recommended that in the initial phase, UNESCO should give to the countries willing to participate in the Warning System financial support for the installation of instruments and for the maintenance of transmission of data.

2. In the interest of broadening international participation in the Tsunami Warning System, IOC is requested to re-issue invitations to its Member States to join the ICG and to invite other countries of the area and appropriate regional international organizations to be represented by observers at future ICG meetings.

3. Considering the locations of seismic and tidal stations in the Pacific Ocean area, it is recommended that a list of key stations be compiled for use in designing a network to protect life and property in those countries:

a. belonging to the Tsunami Warning System in the Pacific, and

b. which may join in the future.

It is further recommended that ICG should accept the offer of the ITIC to compile a draft list which will be distributed to the Member States for review and finalization.

4. In order to achieve standardization in the reporting of tsunami data by tide observers during emergency situations, it is recommended that all participating tide stations use the following procedures:

a. Report all wave data in centimeters (four digits).

b. Report the amplitude and beginning and end times of the initial rise or fall.

c. Continue to report extreme wave heights (either crest to trough or trough to crest) at intervals of about 30 minutes until waves diminish. Each message should include the beginning and end times of the interval being reported and the extreme wave height during that interval. It may sometimes be desirable to overlap the reporting intervals of two messages in order to include a maximum wave that should be reported.

d. A final message should be sent indicating that the waves have diminished and that no additional message will be sent unless the waves increase significantly again.

5. Referring to the Draft, reference WMO/IOC/TEL-III/P. 7 & 8 p. 3-3.4 on the use of the HF radio frequency bands allocated by WARC, 1967, the ICG requests that the Member States prepare answers as required and submit them to IOC which will collate the information, obtain approval of the revised material from the Member States and then submit it to the Joint Group of Experts on Telecommunication.

It is further recommended that IOC should send a representative of the ICG to the next relevant meeting of the Joint Group of Experts on Telecommunication.

6. With a view of further improving the system of exchange of urgent information about tsunamis between the countries of the Pacific basin, the ICG considers organizing a dummy transmission between Khabarovsk, Honolulu, and Tokyo to be a primary requirement. This transmission is to be made on radio frequencies specially allocated for the purpose. The ICG requests the Secretariat of IOC to coordinate the carrying out of the first dummy tests on Tsunami communication on September 16, 1970.

Technical details concerning the use of radio-frequencies for the transmission of information about Tsunami should be agreed upon by the participating countries by means of correspondence through the medium of ITIC in Honolulu.

7. Noting the satisfactory results of the dummy test on Tsunami carried out on September 15, 1968, and bearing in mind the need for overall modernization of the system of exchanging urgent information about Tsunami between Khabarovsk, Honolulu and Tokyo, the ICG considers it desirable to have exchange of such information done not less often than once a quarter. In view of this it is recommended to have the next dummy run on 16 June 1970 at 0200 h GMT originating from Honolulu to Khabarovsk.

On September 16, 1970 at 0200 h GMT is to be made transmission from Khabarovsk to Honolulu. Subsequently transmissions are to be made alternatively from Honolulu and Khabarovsk not less often than once every three months.

Transmission of information is to be done in agreement with the Regulations concerning exchange of urgent information on Tsunamis as agreed between USSR, Japan and USA.

The most effective means of communication are to be used for the transmission of information, including the use of underground cable linking USSR and Japan, after this cable line becomes available for permanent use to transmit meteorological information.

8. Bearing in mind the results obtained in the field of theoretical works on Tsunami and the practical need for creating a generally acceptable method for forecasting concrete parameters of Tsunami, and in particular their heights in different regions of coastlines, ICG urges the Member States to expand in general the national research programs on formulating the above-mentioned methods and by the next meeting of ICG to prepare their respective proposals on the subject.

It is further recommended that the IUGG Tsunami Committee be requested to consider this matter and to submit suitable proposals to the next ICG meeting.

DATA REPORTING TO ITIC

In an effort for ITIC to have the tide gage records showing tsunamis in a most useable format for interested scientists, it would be appreciated if the records would be submitted in both digitized and analog form. The optimum digitizing interval is one minute but other intervals will be accepted as long as they are noted on the data. Also ITIC is attempting to obtain data from all tsunamis not just those which are 2m or greater near the epicenter. Therefore receipt of tide gage records from any observable tsunami would be appreciated.

NEW REPORTING PROCEDURE FOR U.S.A. TIDE STATIONS

U.S.A. Tide Stations participating in the Tsunami Warning System have changed to the Metric System. Observers now report tsunami wave heights in centimeters, using four digits, to the Tsunami Warning Center at the Honolulu Observatory in Hawaii.

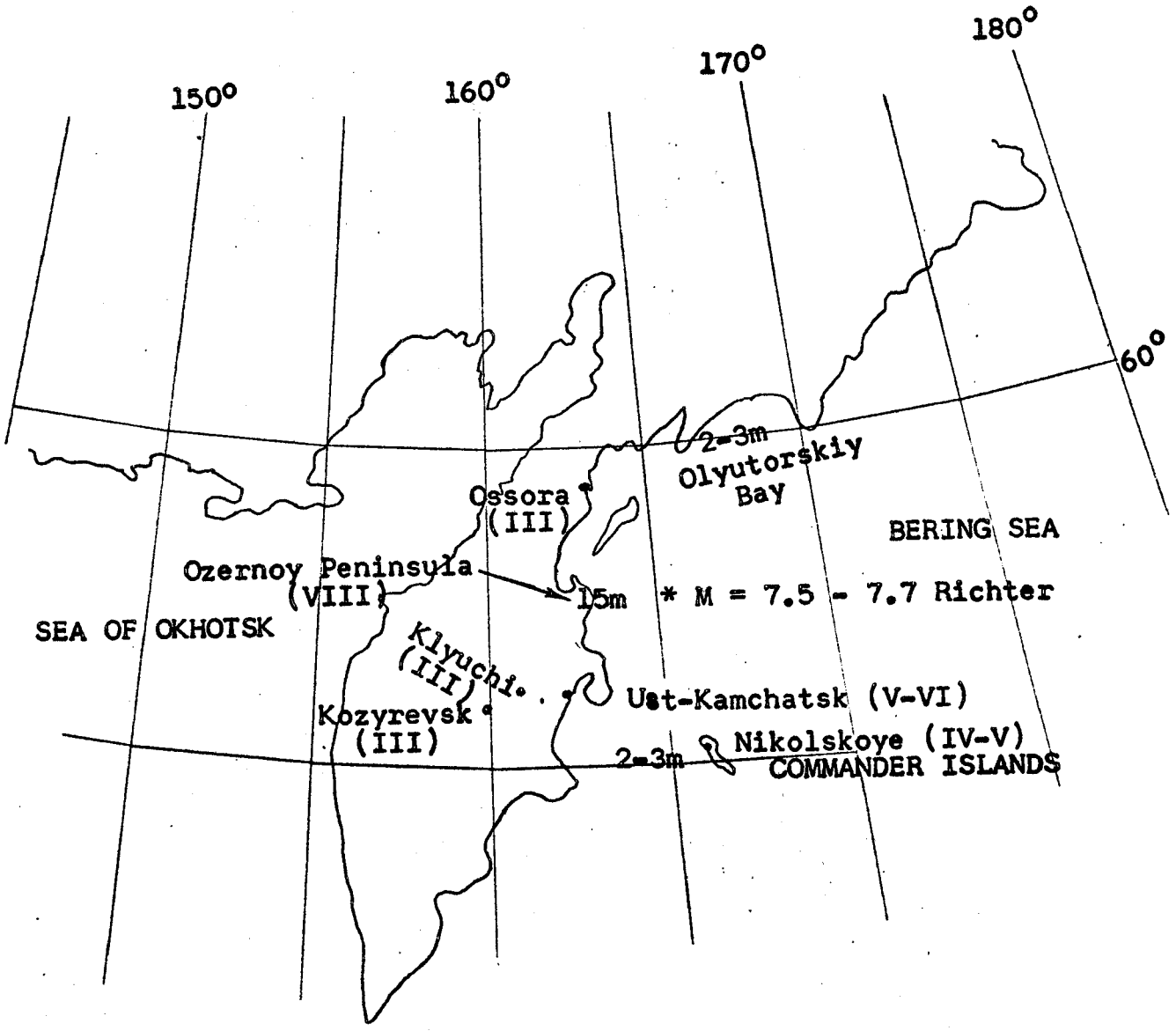
ON THE EARTHQUAKE AND TSUNAMI IN THE BERING SEA ON NOVEMBER 23, 1969

By S. A. Fedotov (Translation by S. L. Soloviev)

At 0210 (local time) on November 23, 1969 a strong earthquake was felt along the Bering Sea coast of the Kamchatka Peninsula and on the Commander Islands. The epicenter of this 7.5-7.7 magnitude earthquake was in the Bering Sea about 100 km east of the Ozernoy Peninsula at 57.3°N latitude and 165.6°E longitude. The intensity of the earthquake (on a scale of 12) was reported as: greater than 8 on the Ozernoy Peninsula, 5-6 in Ust'Kamchatsk, 4-5 in the village of Nikolskoye on Bering Island, and about 3 in the villages of Ossora, Klyuchi and Kozyrevsk on the Kamchatka Peninsula.

A half an hour after the earthquake, the first wave of the tsunami reached Ozernoy Cape. The trace (evidence) of this wave was noted at a height 15 meters above sea level. Twenty minutes after the first wave, a second wave between 6 and 8 meters in height arrived followed by a third wave. A tsunami about 2-3 meters in height was observed south of the generating area in Nikolskoye on Bering Island and north of the generating area in the region of Olyutorskiy Bay and Lavrovaya Bay.

This is the strongest earthquake of the century to occur in the western region of the Bering Sea. All of the previous strong earthquakes (1943-1946) were in the 6.5-6.7 magnitude range. There are no historic data of tsunamis in the Bering Sea. According to the data recorded by a temporary seismic station on the Ozernoy Cape, the S-P time difference for aftershocks is small--within the limits of 0-10 seconds.



KAMCHATKA PENINSULA

Earthquake Intensities & Tsunami Heights

NEW DIRECTOR FOR WORLD DATA CENTER A - SUBCENTER TSUNAMI

Dr. Gaylord Miller, ESSA/Joint Tsunami Research Effort, has been appointed Acting Director, WDCA-Tsunami, replacing George Pararas-Carayannis who is no longer in Hawaii.

TIDE STATIONS IN THE TSUNAMI WARNING SYSTEM

The tide station at Marsden Point, New Zealand has been incorporated into the Tsunami Warning System. A BRISTOL remote recorder was installed at the existing tide station. BRISTOL Remote Tide Gages have been installed at Apia, Western Samoa and Suva, Fiji and BRISTOL remote recorders have been installed at Johnston Island, Balboa and Valparaiso as part of the equipment upgrading project for the TWS.

WEAK TSUNAMI - 1970

Thus far in 1970 one tsunami has been reported to ITIC. The 12 07 08.6 GMT 10 January 1970 earthquake, M_S7.5, in Mindanao, Philippine Islands generated a weak tsunami that was recorded at the Malakal, Palau Island, Caroline Islands Tide Station with a height of 0.06m.

PHILIPPINE ISLAND EARTHQUAKE - April 17, 1970

At 05 34 05.6 GMT on April 7, 1970 a M_S7.3 (C&GS) earthquake occurred on Luzon Island. The epicenter of the earthquake was Latitude 15.8 N, Longtitude 121.7E. Seven people were killed and more than 175 persons were injured as a result of the earthquake that did major damage in the Manila area and was felt throughout Luzon. The April 9, 1970 issue of the Manila Times Newspaper quoted observers near Dingalan Bay thus: "Then the bay water line receded as far as 70 meters out into the ocean." ....."And then the sea came surging inland, swamping huts built on the shore. He described the incoming waves as taller than a man." To date ITIC has not received any marigraphic records to show that this event was other than local in extent.

ADDITIONAL NATIONS JOIN THE INTERNATIONAL COORDINATION GROUP

In response to the invitation of the Intergovernmental Oceanographic Commission the following additional nations have joined the International Coordination Group for the Tsunami Warning System in the Pacific: China (Taiwan), Ecuador, France, New Zealand and the Philippines. Their representation is most welcomed.

TSUNAMI WARNING CENTER INVESTIGATIONS: Jan. 1, 1970 - June 1, 1970

During the 5-month interval from January 1, 1970 to June 1, 1970 the Tsunami Warning Center investigated 24 earthquakes. Of this number a tsunami WATCH was issued for the May 31 Peruvian earthquake and the WATCH was cancelled as soon as it was determined that a Pacific-wide tsunami had not been generated.

TWC - TOKYO - KHABAROVSK COMMUNICATIONS TEST

The Tsunami "dummy" communications test requested under Recommendation 7 of the IOC/TWG Vancouver Meeting (page 4) was conducted at 0200 GMT 16 June 1970. The test was very favorable and has been reported to the ICG Chairman, Moscow and Tokyo. The results are:

GMT 6/16/70

0200	TWC initiated test to Tokyo thence to Khabarovsk
0220	Khabarovsk received test message
0250	Tokyo received Khabarovsk return message
0255	Tokyo relayed message to TWC
0310	TWC received reply

70 min. total round trip time